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(54) Cladding for reversible sky-light

(57) A window assembly particularly for a top-hung sky-light reversible for cleaning comprises a sash support (2) horizontally pivoted on the main frame, a sash (6) pivoted on the sash support by hinges (3) and protective cladding (8, 9, 11, 12) e.g. in the form of inverted channels of light metal. Cladding (9) is coupled to cladding (11) by an horizontal hinge (15), the axis of which is situated below and parallel with the axis of the hinge (3) and is spaced therefrom a distance approximating the distance by which the cladding (9) overlaps the cladding (11) when the sash support (2) and the sash (6) are locked parallel with each other, the cladding (9) or (11) being slidable relative to the support or the sash when movement of the hinge (15) occurs.

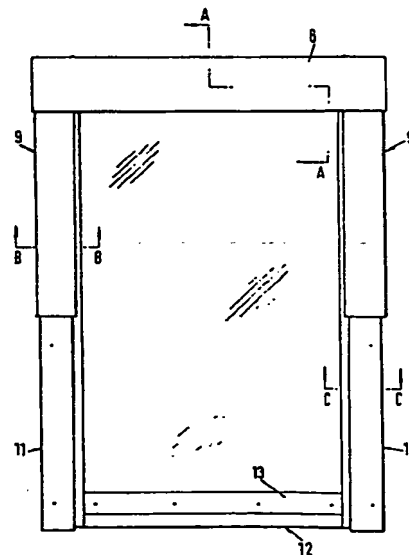


FIG 1

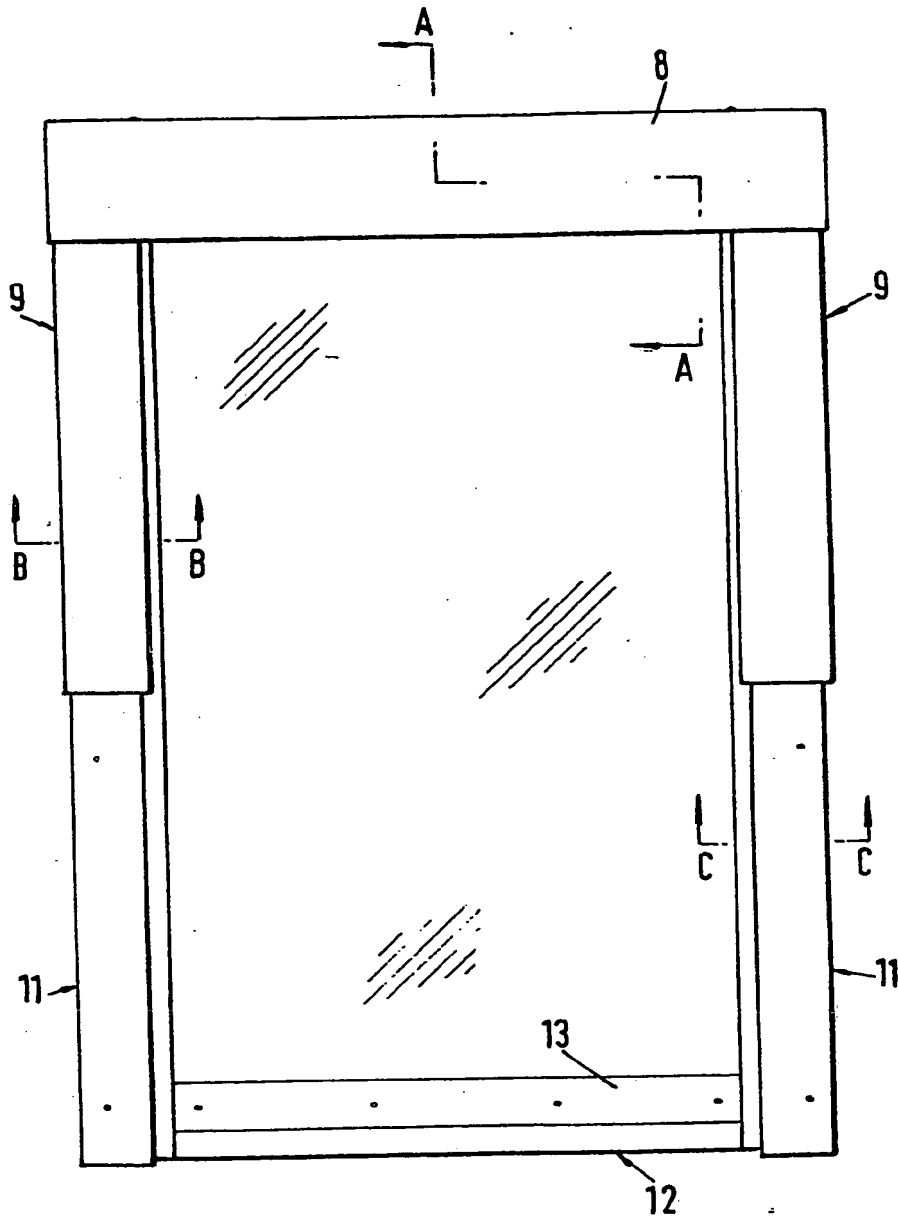


FIG. 1

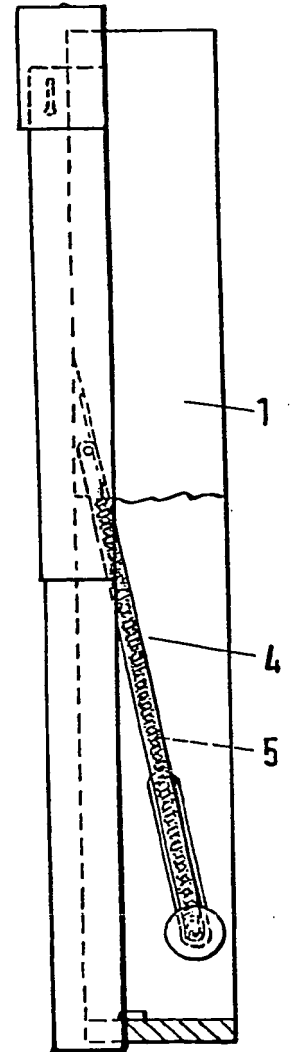


FIG. 2.

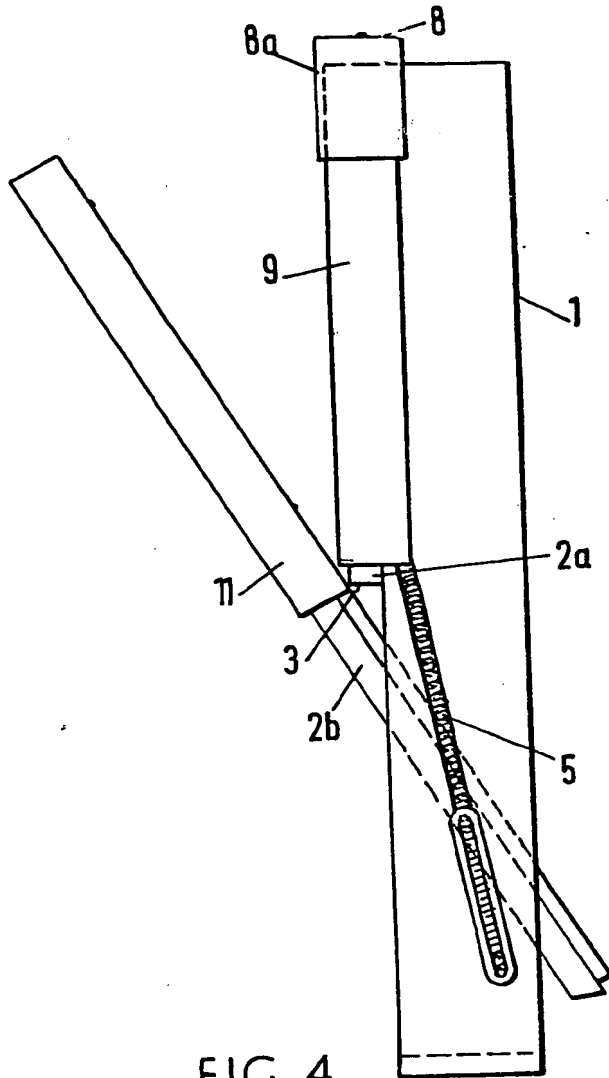


FIG. 4.

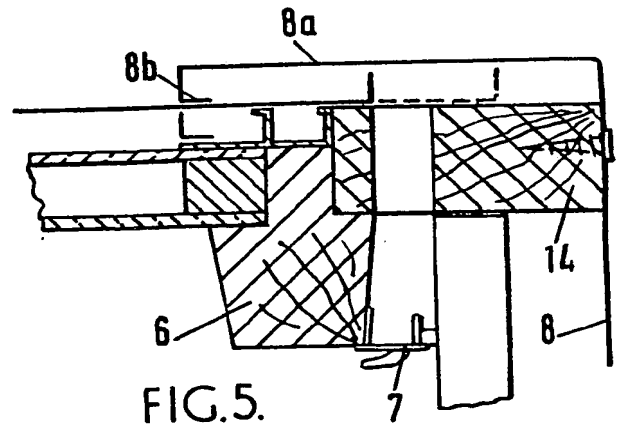


FIG. 5.

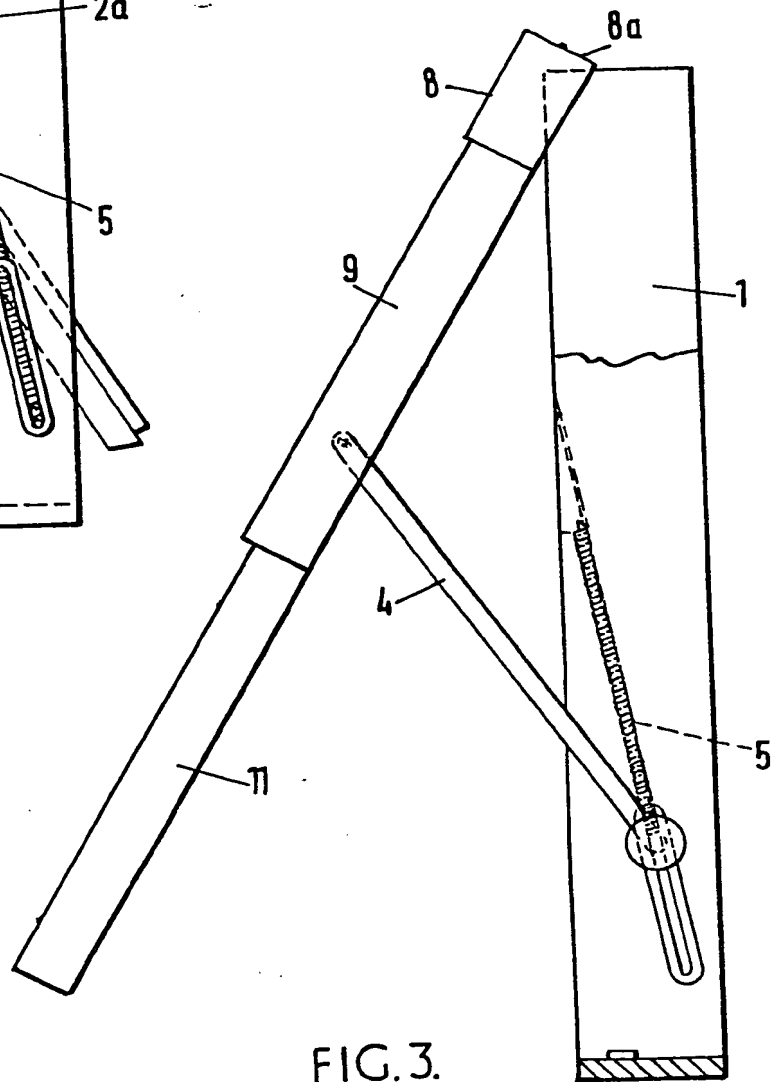


FIG. 3.

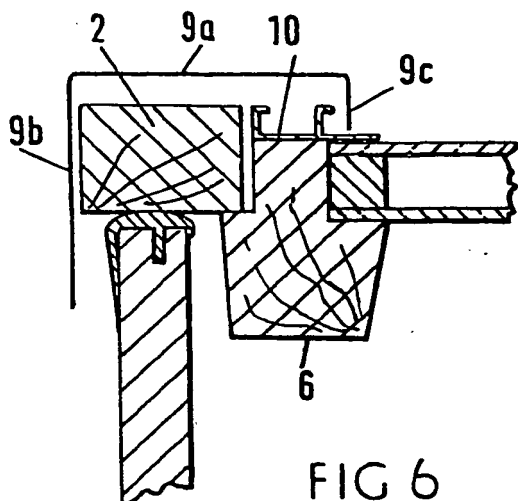


FIG. 6

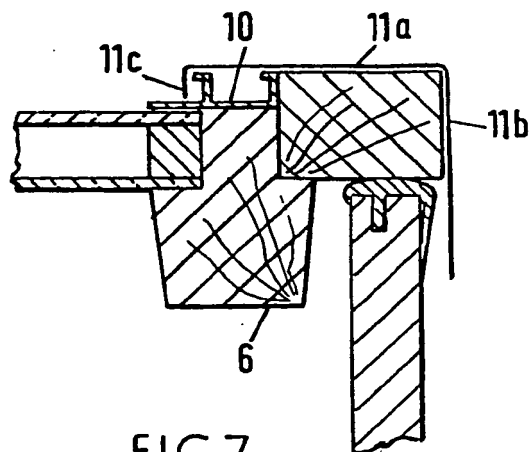


FIG. 7.

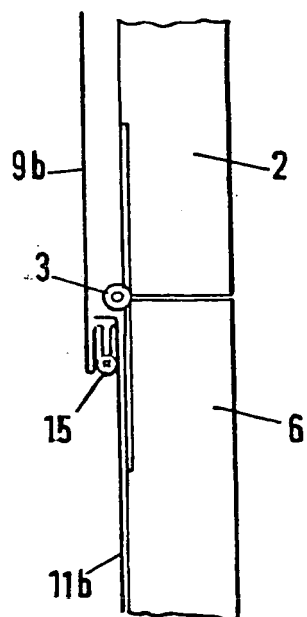


FIG. 8.

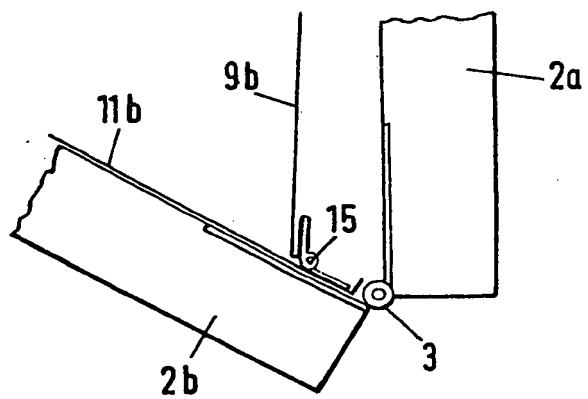


FIG. 9.

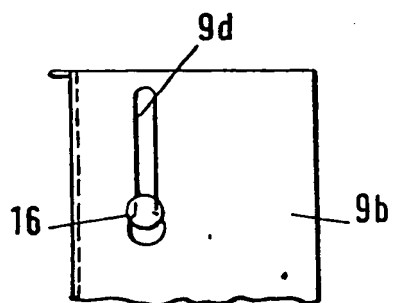


FIG. 10.

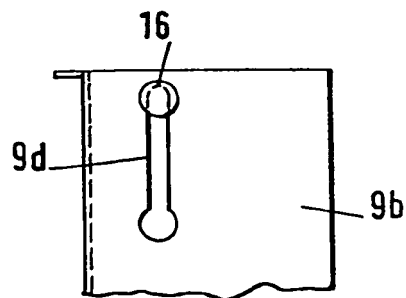


FIG. 11.

SPECIFICATION

Improvements relating to opening windows

- 5 This invention relates to windows of the kind comprising a sash support which is tiltable about one end around an horizontal axis on a window frame and which is pivotally connected at its other end to the approximate mid-point of a window sash which is alternatively securable to the sash support or swingable thereon into a reversed or inclined position relative thereto for enabling the window to be cleaned from the interior of the building to which it is fitted. Such windows are commonly used as top hung skylights and particularly when so intended to be used it is important to ensure that the whole assembly is weatherproof and that in particular ingress of water when the sash is closed is positively prevented.
- 20 To that end it has been proposed to apply overlapping cladding to those parts of the sash support and the sash which are exposed to the weather but bearing in mind the need for overlap between different cladding parts when the sash is closed and the need for the pivotal connection between the sash support and the sash to be maintained various relatively complicated hingeing arrangements have hitherto been found necessary in order to ensure freedom from mutual interference or jamming of the cladding parts when the sash is required to be swung into its partly or completely reverse aspect or cleaning position.

The present invention has been devised with the object of providing a simplified and therefore improved weatherproof window of the kind and for the purpose referred to.

- In accordance with the present invention in its widest aspect there is proposed a window of the kind referred to characterised in that the outward face and side surfaces of the sash support and the sash which are exposed to the weather when the window is closed are protected by a layer of cladding and that the cladding associated with the sash support is coupled to the cladding associated with the sash by a hinge supplemental to the hinge which couples the sash support to the sash, the supplemental hinge axis being situated parallel with the axis of the hinge which couples the sash to the sash support and being spaced therefrom a distance approximating to the distance by which the cladding associated with the sash support overlaps the cladding associated with the sash when the sash support and the sash are locked parallel with each other, the cladding associated with one at least of the sash support and the sash being slidable relative thereto when movement of the supplemental hinge occurs.

In accordance with a further feature of the invention the outward face of the sash frame is provided adjacent each side edge with at least one channel which is effective to cause drainage of any water which intrudes past the side edge of the cladding associated with either the sash or the sash support.

A particular and at present preferred form of skylight window in accordance with the invention is illustrated by way of example in the accompanying

drawings and is hereinafter described. In these drawings:-

Figures 1 and 2 are respectively a front elevation and a side elevation of the window in its closed position.

Figures 3 and 4 respectively show the window in its normal open position and in its reversed for cleaning position;

Figure 5 is an enlarged scale section on line A - A of *Figure 1*;

Figure 6 is an enlarged scale section on line B - B of *Figure 1*;

Figure 7 is an enlarged scale section on line C - C of *Figure 1*;

Figure 8 is an enlarged detail of the window central hinge assembly shown in a position corresponding to *Figure 2*;

Figure 9 is an enlarged detail of the window central hinge assembly shown in a position corresponding to *Figure 4*;

Figures 10 and 11 respectively corresponding to *Figures 2 and 4* are enlarged details of the top parts of those *Figures*.

Referring now to the drawings there is shown a rectangular window frame 1 made of wood. Suspended from this frame 1 by hinges (not visible) secured to the top surface of the frame 1 is an inverted U-shaped frame 2. Supported by horizontal hinges 3 at the lower end of the frame 2 is a rectangular wooden window sash 6, the hinges 3 being located midway along the sash 6. Below the level of the hinge axis, the side rails of the sash 6 are of increased width so as to provide a continuous surface flush with the outside edge surface of the support 2 when the window is closed. The sash support element 2 has at each side a pivotally connected stay 4 of which the other end is pivotally and slidably received, under control of a spring 5, in a slot provided in the fixed frame 1. The spring 5 assists the stay 4 and hence the sash support towards a fully open position (*Figure 3*). Knobs (not shown) are provided for locking the stays 4 at required degrees of opening.

The sash 6 normally has its upper part locked to the sash support 12 by a catch 7 so that the sash 6 and the sash support 2 are in the same plane and can move to and from the fully closed position shown in *Figure 2* and the open position shown in *Figure 3*. However by releasing the above mentioned catch the sash 6 can swing around the axis of the hinges 3 to the part-reverse aspect position shown in *Figures 4 and 8* to facilitate cleaning of the window from inside the premises to which it is fitted.

The parts of the sash support 2 which are exposed to weather are protected by means of overlaid and suitably secured separate cranked profile thin light metal cladding sheets 8 and 9. The sheet 8 has its top space away from the top of the sash support element top rail by means of two spacers 14, one only of which is shown in *Figure 5*. Further the middle part of the front surface 8a of the sheet 8 terminates in an turned flange 8b. Each of the two cladding sheets 9 has the cross-sectional profile illustrated in *Figure 6* and comprises a face part 9a, a side skirt 9b and a terminal flange 9c. The face part 9a and flange 9c are

of sufficient extent to overlap one of a pair of metal drainage channel pieces 10 affixed one to each side of the window sash 6.

- In like manner the parts of the sash 6 which are exposed to weather are protected by means of overlaid and suitably secured separate cranked profile thin light metal cladding sheets 11 and 12. The sheet 12 covers the front and underside of the bottom rail of the sash and is secured by a bar 13.
- Each sheet 11 has the profile illustrated in Figure 7, that is to say it has a face part 11a, a side skirt 11b and a terminal flange 11c, the face part 11a and flange 11c being of sufficient extent to overlap an already mentioned drainage channel piece 10.
- It is essential for weatherproofing purposes that when the window is closed the lower ends of the cladding sheets 9 should overlap the upper ends of the cladding sheets 11 and that accordingly the lower end part at least of the cladding sheets 11 should be spaced away from the sides of the sash support element 2. The cladding sheets 9 and 11 are accordingly coupled together by a supplementary horizontal hinge 15 of which the axis is spaced from the axis of the adjacent hinge 3 by an amount approximately equivalent to the extent of the aforesaid overlap as best shown in Figures 8 and 9. In consequence of this hinge disposition the cladding sheets 9 must be permitted to move relative to the sash support element 2. In order to control and limit this movement, the top of the side skirt 9b of each cladding sheet 9 is formed, as shown in Figures 10 and 11, with a vertical slot 9d which is enlarged at one end and through which there penetrates a headed stationary pin 16 fixed to the end of the horizontal part of the sash support 2. Figure 10 illustrates the position of the slot 9d in relation to the pin 16 when the window is closed whilst Figure 11 illustrates the position of the slot 9d relative to the pin 16 when the window is in a reversed position for cleaning.

- Reference in the foregoing has been made to the provision of drainage channel pieces 10 extending down the outward face of the sash 6. These drainage channels are made of metal and form part of a rectangular frame of which the top and bottom elements are not visible in the drawings. However the top element of this frame fits into a channel forming part of the top cladding sheet 8 in order to receive and drain any rain which enters beneath the top cladding sheet 8.

CLAIMS

1. A window of the kind referred to, characterised in that the outward face and side surfaces of the sash support and the sash which are exposed to the weather when the window is closed are protected by a layer of cladding, and that the cladding associated with the sash support is coupled to the cladding associated with the sash by an horizontal hinge supplemental to the hinge which couples the sash support to the sash, the supplemental hinge axis being situated below and parallel with the axis of the hinge which couples the sash to the sash support and being spaced therefrom a distance

approximating to the distance by which the cladding associated with the sash support overlaps the cladding associated with the sash when the sash support and the sash have locked parallel with each other, the cladding associated with one at least of the sash support and the sash being slidable relative thereto when movement of the supplemental hinge occurs.

2. A window in accordance with Claim 1 wherein the cladding associated with the sash support is slidable relative thereto under the control of guide means when movement of the supplemental hinge occurs.

3. A window in accordance with Claim 1 or Claim 2 wherein the outward face of the sash frame is provided adjacent each side edge with at least one channel which is effective to cause drainage of any water which intrudes past the side edge of the cladding associated with either the sash or the sash support.

4. A window of the kind referred to constructed and adapted to operate substantially as hereinbefore described with reference, to, and as shown, in the accompanying drawings.

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